

ABSTRACT

An apparatus for controlling the rate of flow of fluid material through a flow channel having an exit aperture leading to a mold cavity, the apparatus comprising:

a pin having an axis slidably mounted in a housing containing the channel for back and forth axial movement of the pin through the channel;

the pin having a bulbous protrusion along its axis, the bulbous protrusion having a smooth curvilinear surface extending between an upstream end and downstream end of the bulbous protrusion and a maximum diameter circumferential surface intermediate the upstream and downstream ends of the bulbous protrusion;

the channel having an interior surface area portion which is complementary to the maximum diameter circumferential surface of the bulbous protrusion of the pin;

the pin being slidable to a position within the channel such that the maximum diameter circumferential surface of the bulbous protrusion mates with the complementary interior surface portion of the channel.